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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,054	12/03/2004	Gunther Feuerecker	016906-0357	2873

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FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER	
FORD, JOHN K	

ART UNIT	PAPER NUMBER
3744	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/517,054	FEUERECKER ET AL.	
	Examiner	Art Unit	
	John K. Ford	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/3/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Applicant's preliminary amendment has been received and this office action is based on the claims as they are presented there.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Even after the preliminary amendment the apparatus claims contain huge amounts of function language about intended manners of operation without sufficiently claiming the even minimal underlying structure so as to permit these rather elaborate operations to be performed. As well claim 1 has no discernible preamble. Is the "characterized" recitation to be read as "comprising" in traditional US practice or are the limitations which precede "characterizing" to be read as an integral part of the claim? If so, is the vehicle positively being claimed? The scope of claim 1 is extremely unclear and by extension so is the scope of claims 2-20.

The excessive use of the phrase "can be" renders these claims vague. "Can be" implies mere capability and is treated as such in the rejections which follow. It may be applicant's intent to claim these recitations more positively and if that is the case the examiner would suggest using a more positive word like - - is - - in its place.

Method claims lack proper method steps and often refer to things that have no antecedent basis. In addition these claims run afoul of Ex parte Lyell, 17 USPQ2d 1548 (BPAI 1990) and therefor claim 10 must be rewritten in independent form.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-20 are rejected under 35 U.S.C. 102(a) as being anticipated by EP 1,295,739.

This reference was published before applicant's effective filing date. It is listed on the EP 03/05751 international search report as an "X" document on claims 1-20 (presumably the same claims 1-20 being presented here) and that explanation is incorporated here by reference. Applicant can overcome this rejection by perfecting his priority claim including translations as set forth in 35 USC 119(b)(3).

Claims 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Karl (USP 6,041,849).

This document is listed on the EP 03/05751 international search report as an "X" document on claims 1-20 (presumably the same claims 1-20 being presented here). It shows a refrigerant circuit with a plurality of heat exchangers 5 and 6, one of which (5) is part of the a coolant circuit (the cabin air circuit). On demand valve 12 is closed momentarily in the heating cycle which permits the compressor to draw refrigerant from the outdoor heat exchanger 6 (which is inoperative in the heating mode) into the heating

cycle. Regarding claim 2, any heat exchanger "can be" disconnected simply by sawing off the inlet and outlet from the remainder of the system. Regarding claim 3, the means for determining the "demand" is the pressure sensed at the outlet of the regulator 15 remaining lower than the set valve (which is a function of outside temperature and temperature within the cabin). Regarding claim 7, since there is no proper antecedent for "the temperature sensor" in claim 6 (because of the alternatives stated there) it is the examiner's conclusion that claim 7 is met because the pressure sensor alternative in claim 6 is met. Regarding claim 8 and 11, since the outlet of the pressure regulator 15 is connected through lines 3 and 1 to the inlet of the compressor 4 it is the suction pressure and these limitations are met. Regarding claim 9, see non-return valve 18. Regarding claim 20, the "can be" limitation, if read as a mere capability is met because one "can" put a constant pressure regulator valve on the downstream end of the evaporator if one wanted to.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Mehdi et al (USP 4,616,484) and Karl (USP 6,041,849)

Mehdi discloses a coolant based heater 44 which performs a refrigerant heating using engine coolant instead of a refrigerant heating function using a pressure regulator 15 in Karl. To have substituted Mehdi's coolant based heater 44 in place of Karl's pressure regulator 15 would have been obvious to one of ordinary skill in art to advantageously reduce stress on the compressor. Alternatively to have added the refrigerant recovery system (piping and valves) of Karl to Mehdi to advantageously allow the system to recover any refrigerant that accumulates in outdoor heat exchanger 30 would have been obvious to one of ordinary skill in the art.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art as applied to claim 6 above, and further in view of Alsenz (USP 5,694,780).

To have added a compressor head temperature sensor 39 to monitor compressor refrigerant discharge temperature to the prior art would have been obvious to one of ordinary skill to advantageously sense compressor overload.

Claims 11-14 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mehdi/Karl as applied to claim 10 above, and further in view of Hara al. (USP 5,419,149).

Regarding claims 11-14, in Figure 6, Hara teaches predetermined time control of refrigerant heat recovery where those predetermined times are determined from other variables. To have implemented the recovery times of the prior art discussed above

with the strategy disclosed in Figure 6 of Hara would have been obvious to one of ordinary skill in the art to improve recovery of the refrigerant without sacrificing too much performance.

Regarding claim 17, fans adjacent the heat exchangers are conventional as shown in Figure 10 of Hara (fans 12, 11 and 9) To have placed fans next to the heat exchangers of the prior art would have been obvious because they are conventionally there.

Regarding claims 18-20, since applicant hasn't set any limits on what "suction pressure" is or where it is measured Figure 7 of Hara is the relevant Figure. To have implemented this control algorithm into the Mehdi/Karl prior art to advantageously reduce vibration would have been obvious to one of ordinary skill in the art.

Claim 15-16 are ejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art as applied to claim 10 above, and further in view of official notice.

Official notice is taken that many pressure regulator valves close when the flow through them stops. To have used such a closing regulator and to have turned off the compressor in Karl when heating and cooling wasn't desired and to have recirculated the cabin air through the now inoperative system using the conventional blower fan would have been obvious to one of ordinary skill in the art to have conserved energy, official notice being taken of conventional automotive air conditioning system recirculation mode switches. Regarding claim 16, to have re-started the compressor at

some later time when temperature conditioning was needed would have been obvious. Lacking in claim 16 is any "responsive to" step.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of the prior art as applied to claim 10 above, and further in view of Scherer (USP 3,738,119).

Scherer '119 discloses using a constant discharge pressure regulator valve to advantageously prevent evaporator freeze up. To have used one of these in the prior art to perform this desirable result would have been obvious to one of ordinary skill.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Ford whose telephone number is 571-272-4911. The examiner can normally be reached on Mon.-Fri. 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John K. Ford/
Primary Examiner, Art Unit 3744